

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of training a neural network to perform decoding of a time-varying signal comprising a sequence of input symbols, which is coded by a convolutional coder such that each coded output symbol depends on more than one input symbol, ~~characterised~~ characterized by repetitively:

providing a plurality of successive input symbols to the neural network and to the convolutional coder,

comparing the network outputs with the input signals; and

adapting ~~the network~~ parameters of the network to reduce ~~the differences~~ therebetween there between.

2. (Currently Amended) ~~A~~ The method according to claim 1, further comprising supplying the neural network ~~not only~~ with the coded output symbols ~~but also with~~ and at least some of the plurality of successive input symbols.

3. (Currently Amended) A method of encoded communications in which input symbols are convolutionally encoded to provide, for each input symbol, a plurality of output symbols which depend on the input symbol, and the input symbol is transmitted

together with the plurality of output symbols to a neural network decoder for decoding encoded communications in which received input symbols are convolutionally encoded to provide, for each received input symbol, a plurality of output symbols which depend on the input symbol, connected so as to feed back to its inputs at least some of the decoded symbols it generates at its outputs, wherein at least one of the input symbols is transmitted to the neural network together with the coded output symbols, and fed to its inputs together with the fed-back decoded symbols.

4. (Currently Amended) A neural network for decoding encoded communications in which input symbols are convolutionally encoded to provide, for each input symbol, a plurality of output symbols which depend on the input symbol, connected so as to feed back to its inputs at least some of the decoded symbols it generates at its outputs, wherein at least one of the input symbols is transmitted to the neural network together with the coded output symbols, and fed to its inputs together with the fed-back decoded symbols.

5. (Cancelled)

6. (Currently Amended) ~~A device~~ The neural network according to claim 4, further comprising a programmable signal processing device programmed to perform ~~said~~ a plurality of neuron computations on a received signal.

7. (Currently Amended) ~~A device~~ The neural network according to claim 4, ~~including further comprising~~ an integrated circuit ~~comprising~~ having a plurality of neuron computation devices operating to perform ~~said~~ neuron computations in parallel.

8. (Currently Amended) A communication[[s]] terminal ~~device~~ operable to communicate selectively over a communications channel in a plurality of different communications modes, comprising a data processing device for processing time-varying signals, said data processing device being arranged to implement a the neural network according to claim 4.

9. (Currently Amended) ~~A device~~ The communication terminal according to claim 8, wherein the communications terminal device is operable to add a new communication[[s]] mode by receiving new ~~said~~ parameter values via said communication[[s]] channel.

10. (Currently Amended) A communication[[s]] station for use in a system including a the communication terminal according to claim 9, the station comprising means for transmitting a signal comprising the new parameter values for neural computations, to add a new communication[[s]] mode to said ~~device~~communication terminal.